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**In The United States Patent and Trademark Office  
On Appeal From The Examiner To The Board  
of Patent Appeals and Interferences**

In re Application of: Mukesh Dalal  
Serial No.: 09/415,507  
Date Filed: October 8, 1999  
Confirmation No.: 4917  
Group Art Unit: 3623  
Examiner: Susanna M. Meinecke Diaz  
For: *System and Method for Optimizing Request-Promise Workflows*

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*Willie Jiles*

Willie Jiles

Date: October 18, 2004

**Appeal Brief**

Appellant has appealed to the Board of Patent Appeals and Interferences ("Board") from the decision of the Examiner mailed April 14, 2004, finally rejecting all pending Claims 1-47. Appellant filed a Notice of Appeal on August 16, 2004. Appellant respectfully submits this Appeal Brief in triplicate with the statutory fee of \$340.00.

**Real Party in Interest**

This Application is currently owned by i2 Technologies US, Inc., as indicated by:

an Assignment recorded on February 14, 2000, from the sole inventor to i2 Technologies, Inc., in the Assignment Records of the United States Patent and Trademark Office ("PTO") at Reel 010615, Frames 0899-0902 (a corrected assignment cover sheet being recorded on October 8, 1999 in the Assignment records of the PTO at Reel 010308, Frames 0394-0396); and

an Assignment recorded on July 30, 2001, from i2 Technologies, Inc. to i2 Technologies US, Inc., in the Assignment Records of the United States Patent and Trademark Office at Reel 012037, Frames 0412-0422.

**Related Appeals and Interferences**

No known appeals, interferences, or judicial proceedings will directly affect, be directly affected by, or have a bearing on the Board's decision regarding this Appeal. Appellant notes that he previously filed a Notice of Appeal (mailed September 25, 2002) and subsequent Appeal Brief (mailed May 16, 2003), but the Examiner reopened prosecution in response to the Appeal Brief. (See Office Action mailed August 13, 2003)

**Status of Claims**

Claims 1-47 are pending in this Application, stand rejected pursuant to a final Office Action mailed April 14, 2004 (the "Final Office Action"), and are all presented for appeal. All pending claims are shown in Appendix A.

**Status of Amendments**

All amendments submitted by Appellants have **not** been entered by the Examiner. (See Advisory Action, Item 7) Appellant's Response to the Final Office Action was filed July 14, 2004 (the "Final Response"), amending independent Claims 1, 11, 22, 33, and 47. In particular, although Appellant believed (and still believes) that these claims recited patentable subject matter without amendment, Appellant amended these claims in the Final Response in order to advance prosecution with respect to the rejections under 35 U.S.C. § 101. These amendments were intended to simplify issues for Appeal, in the event that the Examiner did

not issue a Notice of Allowance in response to the Final Response; however, the Examiner refused to enter these amendments.

### **Summary of Claimed Subject Matter**

In certain embodiments, as illustrated in FIGURE 1, the present invention includes a system 102 for optimizing request-promise workflows. The system 102 in general includes a first entity 104, a second entity 106, and a communication link 108. The first entity 104 and the second entity may be, for example, a product manufacturer, a service provider, a financial institution, or any other entity that performs optimization. (Page 9, Lines 2-9)

In certain embodiments, the first entity 104 produces supplies 110 and 112, and optimizes its production of the supplies 110 and 112 to generate a promise 114 for the supplies 110 and 112. The second entity 106 satisfies a demand 116 by receiving the supplies 110 and 112 from the first entity 104. The second entity 106 optimizes its production of the demand 116 to generate a request 118 for the supplies 110 and 112. The second entity 106 may generate a request 118 in accordance with a client request 119 and internal resources 124. The internal resources 124 may be, for example, factory overhead, employee man-hours, factory output, computer time, or any other suitable resource. The second entity further communicates the request 118 to the first entity 104, and receives a promise 114 for the supplies 110 and 112 from the first entity 104 based on the request 118. If the promise 114 does not satisfy the request 118, the second entity 106 optimizes its production of the demand 116 to generate a new request. (Page 9, Line 30 through Page 13, Line 2)

The second entity 106 repeats the steps of optimizing its production to generate a request 118, communicating the request 118 to the first entity 104, receiving a promise 114 from the first entity 104, and reoptimizing its production to generate a new request, until the promise 114 satisfies the request 118. If the promise 114 satisfies the request 118, the second entity 106 communicates a demand promise 120 to a client 122. The first entity 104 may optimize its production of the supplies 110 and 112 independently of the second entity 106, and similarly the second entity 106 may optimize its production of the demand 116 independently of the first entity 104. (Page 10, Lines 3-15)

FIGURE 2 is a block diagram of one embodiment of a system 200 having one authority domain that provides supplies to another authority domain. Authority domain X 204 may be, for example, a supplier of the internal components of a product, while an authority domain Y

206 may be, for example, a producer of the product that uses the internal components supplied by the authority domain X 204. X 204 sells a supply A 208 and a supply B 210 to Y 206 for \$100 per unit. One unit of the internal resource R 212 is needed to produce one unit of supply A 208, and three units of internal resource R 212 is needed to produce one unit of supply B 210. X 204 sells supply A 208 for \$200 per unit and supply B 210 for \$200 per unit. Internal resource R 212 is limited to twenty units. (Page 11, Lines 9-23)

Domain Y 206 produces a demand C 216 and a demand D 218. Two units of an internal resource S 220 are needed to produce one unit of demand C 216, and one unit of internal resource S 220 is needed to produce one unit of demand D 218. Internal resource S 220 is limited to twenty units. A client 122 sends a request 119 for ten units each of C 216 and D 218. Y 206 also needs one unit of supply A 208 to produce one unit of demand C 216, and one unit of supply B 210 to produce one unit of demand D 218. Y 206 sells demand C for \$500 per unit, and demand D 218 for \$500 per unit. To request supplies, Y 206 communicates a request 118 to authority domain X 204. In response, X 204 communicates a promise 114 to authority domain Y 206. Y 206 may also send a demand promise 120 to the client 122. (Page 11, Line 23 through Page 12, Line 6)

FIGURE 3 is a flowchart demonstrating one embodiment of a method of operation of system 200. In general, the authority domain Y 206 optimizes its production of demands 216 and 218 to generate a request 118 for the supplies 208 and 210 needed to satisfy the demands 216 and 218. Y 206 communicates the request 118 to X 204, and then receives a promise 114 from X 204. Y 206 then determines whether the promise 114 satisfies the request 118. If the promise 114 does not satisfy the request 118, Y 206 reoptimizes in order to generate a new request in response to the promise 118. (Page 12, Lines 7-17)

The method begins at step 302, where Y 206 establishes a demand for ten each of demand C 216 and demand D 218 in response to a request 119 from a client 122 and in accordance with internal resource S 220, which is limited to twenty units. Y 206 assumes that supply A 208 and supply B 210 are unlimited, at step 304. Y 206 optimizes its production of demands C 216 and D 218 to generate a request 118 for supplies A 208 and B 210 needed to satisfy the demands C 216 and D 218, at step 306. The request 118 may include a first request for supply A 208 and second request for supply B 210. In this example, the result of the optimization is a request for five units of C 216 and ten units of D 218. Note that Y 206 would

want to produce more units of D 218 than of C 216 because D 218 requires fewer units of internal resources than C 216 does. (Page 12, Line 18 through Page 13, Line 2)

Y 206 communicates the request 118 for five units of A 208 and ten units of B 210 at step 308. X 204 optimizes in accordance with its internal resource R 212 which is limited to twenty units, and decides it can promise five units of A 208 and five units of B 210. Therefore, X 204 determines that it cannot meet the request. If X 204 could have met the request, it would send the supplies to Y 206. Note that in general X 204 wants to produce more units of A 208 than B 210, because A 208 requires fewer units of internal resource R 212 than B 210 does. Y 206 receives the promise 114 from X 204 at step 310, and determines whether the promise 114 satisfies the request 118 at step 312. In this first iteration, the promise of five units of B 210 does not satisfy the request, so the promise 114 does not satisfy the request 118, as determined at step 314. In general, Y 206 could determine whether the promise was within an acceptable range of the request, such that the promise could satisfy the request without being equal to the request. (Page 13, Lines 3-21)

Since the promise does not satisfy the request at step 314, Y 206 returns to step 306 and reoptimizes to generate a new request and response to the promise 114. Y 206 selects to consider both supplies in its reoptimization. Alternatively, Y 206 may have chosen to optimize only the supplies that are unsatisfied. Since B 210 is an unsatisfied promise, Y 206 may reoptimize by revising its assumption that B 210 is unlimited. In this case, Y 206 assumes that B 210 is limited to five and reoptimizes to produce seven units of C 216 and five units of D 218. Y 206 communicates the request 118 for seven units of A 208 and five units of B 210 at step 308. X 204 optimizes, resulting in a promise of seven units of A 208 and four units of B. Y 206 receives the promise 114 from X 204 at step 310. (Page 13, Line 22 through Page 14, Line 5)

Y determines that the promise 114 does not satisfy the request 118 at step 312, because the promise of four units of B 210 does not satisfy the request of five units of B 210. Since the promise 114 does not satisfy the request 118 in this second iteration as determined at step 314, the method returns to step 306, where Y 206 reoptimizes to generate a new request. In its reoptimization, Y 206 assumes that B 204 is limited to four. Y 206 reoptimizes, and decides to produce eight units of C 216 and four units of D 218, which requires eight units of A 208 and four units of B 210. Y 206 communicates the request 118 to X 204 at step 308. X 204 optimizes, resulting in a promise of eight units of A 208 and four units of B 210. Y 206

receives the promise 114 at step 310, and determines that the promise 114 of the third iteration satisfies the request 118 at step 312, and then at step 314 the method proceeds to step 316, where Y 206 communicates a demand promise 120 to a client 122, and the method terminates. The profit for X 204 is \$2,400 and for Y 206 is \$3,600, which are optimal for both X 204 and Y 206. (Page 14, Lines 6-25)

In certain embodiments, the method may also be used to exchange arbitrary optimization problems instead of merely exchanging quantities for the request and promises. Optimization problems may be used in any of the scenarios in this description, and may be represented in several different ways, for example, a math programming problem, a linear problem, or a mixed-integer-linear problem. Such optimization problems may include one or more optimization objectives and one or more promise constraints. Appellant's Specification describes such an example embodiment at least at Page 14, Line 26 through Page 16, Line 19. To avoid burdening the record, Appellant does not reproduce this example embodiment in this Summary; however, this embodiment may be relevant to certain claimed embodiments argued below.

FIGURE 4 is a block diagram of one embodiment of a system 400 having one authority domain that provides multiple supplies for a demand of another authority domain. The system includes an authority domain X 204 supplies all the components of products produced by authority domain Y 206. X 204 sells supplies A 402 and B 404 each for \$100 per unit to Y 206. One unit of supply A 402 and one unit of supply B 404 are needed to produce one unit of demand D 406. One unit of supply C 408 is needed to produce one unit of demand E 410. Three units of an internal resource R 412 of X 204 are needed to produce one unit of supply A 402, one unit of R 412 is needed to produce one unit of supply B 404, and two units of R 412 are needed to produce one unit of supply C 408. Resource R 412 is limited to twenty units. Y sells D 406 and E 410 each for \$500 per unit, in response to a client request 119 for ten each of D 406 and E 410. (Page 16, Line 20 through Page 17, Line 5)

In this embodiment, requests for individual supplies are bundled into a bundled request. A bundled request may include, for example, supplies needed to fulfill one demand. For example, a request 416 for A (5 of A) and a request 418 for B (5 of B) are bundled into a bundled request 420 for A and B (5 of A, 5 of B). The bundled request 420 for A and B includes a request for supplies needed to fulfill demand D 406. In response to the bundled request 420 for A and B, X 204 sends out one promise 422 for A and B. After bundling, a

bundled request may include only one request. For example, since one supply C is needed to satisfy demand E, the bundled request 424 for C includes only the request 424 for C. A promise 426 for C is sent in response to the request 424 for C. (Page 17, Lines 6-20)

For each promise that does not satisfy its corresponding request, at least one supply that caused the shortage may be identified as a culprit. For example, suppose that supply A 402 is a culprit. In response to a bundled request 420 for A and B (5 of A, 5 of B), a promise 422 for A and B may identify supply A 402 as the culprit (4 of A, 4 of B, culprit A). According to this embodiment, the supply of each culprit may be constrained by the promise for the culprit. For example, suppose that Y 206 assumes an unlimited supply of A 402, B 404, and C 408. After optimizing, suppose that Y 206 communicates the following requests to X 204: (5 of A, 5 of B), (4 of A, 4 of C) and (3 of C), and receives the following promises from X 204: (4 of A, 4 of B, culprit A), (4 of A, 4 of C) and (2 of C, culprit C). When reoptimizing, Y 206 assumes that the promises of A and B are constraints, that is, A is limited to eight (sum of 4 and 4), B is limited to ten (same as before), and C is limited to six (sum of 4 and 2). By identifying culprits, Y 206 can reoptimize using the limited culprit supply as a constraint, while assuming that the non-culprit supplies are plentiful. (Page 17, Line 21 through Page 18, Line 11)

FIGURE 5 is a flowchart illustrating an example method of operation of system 400. (See Page 18, Line 12 through Page 19, Line 13)

FIGURE 6 is a block diagram of one embodiment of a system 600 having two authority domains that provide supplies to a third authority domain. System 600 includes an authority domain X 204 and an authority domain Z 602 that provides supplies to an authority domain Y 206. In X 204, one unit of internal resource R 602 is needed to produce one unit of supply A 604, and two units of internal resource R 602 are needed to produce one unit of supply B 608. Internal resource R 602 is limited to twenty units. X 204 sells supply A 604 and supply B 608 each for \$100 per unit to Y 206. In Z 602, one unit of internal resource S 614 is needed to produce one unit of supply C 616, and two units of internal resource S 614 are needed to produce one unit of supply D 618. Internal resource S 614 is limited to twenty units. Z 602 sells supply C 616 and supply D 618 each for \$100 per unit to Y 206. Y 206 needs one unit of supply A 604 to produce one unit of demand E 610, one unit of supply B 608 and one unit of supply C 616 to produce one unit of demand F 612, and one unit of supply D 618 to produce one unit of demand G 620. Y 206 sells demands E 610, F 612, and G 620 each for \$300 per

unit based on a request 119 from a client 122 for ten units each of E 610, F 612, and G 620. (Page 19, Line 14 through Page 20, Line 6)

According to this embodiment, a request for individual supplies may be bundled into a bundled request. For example, a request 622 for supply B and a request 624 for supply C may be bundled into a bundled request 628 for supplies B and C. Additionally, a bundled request may be split into sub-bundled requests, for example, sub-bundled requests corresponding to different authority domains such that each authority domain receives only sub-bundled requests. For example, Y 206 places B and C in a bundled request 628 since both B and C are used to produce F. However, since different suppliers produce B and C, Y 206 splits the bundled request 628 into a sub-bundled request 630 for B that is communicated to authority domain X 204, and a sub-bundled request 632 for C that is communicated to authority domain Z 602. A sub-bundled request may include the same request as the bundled request. For example, a bundled request 640 for A is the same as the sub-bundled request 642 for A, since the supply for demand D 610 comes from only one authority domain X 204. Similarly, the sub-bundled request 646 for D includes the same request as the bundled request 644 for D. (Page 20, Lines 7-28)

The sub-bundled promises are then recombined into bundled promises by Y 206 for further optimization. For example, the sub-bundled promise 634 for B sent from authority domain X 204 and the sub-bundled promise 636 for C sent from authority domain Z 602 may be bundled into bundled promise 638 for B and C. Similarly, the sub-bundled promise 641 for A sent from authority domain X 204 may be bundled into bundled promise 643 for A, and the sub-bundled promise 645 for D sent from authority domain Z 602 may be bundled into bundled promise 647 for D. (Page 20, Line 29 through Page 21, Line 8)

Since multiple suppliers are providing the supplies, culprits from larger sub-bundled requests may be discarded for more accurate reoptimization. For example, suppose that Y 206 communicates sub-bundled requests 630 (10 of B) to X 204 and 632 (10 of C) to Z 602, both generated from the same bundled request 628 (10 of B, 10 of C). Now suppose that the promise 634 from X is (9 of B, culprit B) and the promise 632 from Z is (4 of C, culprit C). Culprit B is discarded since it is part of the larger sub-bundled promise. The resulting bundled promise is (4 of B, 4 of C, culprit C). For reoptimization, Y 206 assumes that C is limited, but B is unlimited. Moreover, according to this embodiment, if a sub-bundled promise from one authority domain is smaller than the corresponding sub-bundled promise from another authority



domain, then all the culprits from all the other sub-bundled promises are discarded. For example, if X 204 had communicated an additional sub-bundled promise of (10 of A, culprit A), culprit A may be discarded because culprit C corresponds to a smaller sub-bundled promise. The resulting bundled request would be (10 of A). (Page 21, Lines 9-30)

FIGURE 7 illustrates a flowchart of an example method of operation of system 600. (See Page 22, Line 1 through Page 24, Line 22)

Technical advantages of the optimization system may include reoptimization that may be repeated until an optimal solution is achieved. Instead of performing only an initial optimization, planning entities may perform multiple iterations of reoptimization in order to achieve an optimal solution. A planning entity may optimize using information communicated from the other entities. Moreover, different types of information may be communicated among the entities to be used in the reoptimization, such as limits on supplies or optimization constraints and objectives. Planning entities may also identify supplies that are the cause of the shortages and that cannot be adjusted. (See Page 24, Line 23 through Page 25, Line 7)

#### **Grounds of Rejection to be Reviewed on Appeal**

1. Do Claims 1-10 and 33-43 recite patentable subject matter under 35 U.S.C. § 101?
2. Are Claims 1-47 patentable under 35 U.S.C. § 103(a) over U.S. Patent 6,157,915 to Bhaskaran, et al. (“*Bhaskaran*”)?

#### **Grouping of Claims**

Appellant has made an effort to group claims to reduce the burden on the Board. In the Argument section of this Appeal Brief, where appropriate, Appellant presents arguments as to why particular claims subject to a ground of rejection are separately patentable from other claims subject to the same ground of rejection.

Appellant has concluded that the claims may be grouped together as follows:

With regard to the ground of rejection identified as Issue 1 above, the claims subject to that ground of rejection may be grouped together as a single group for purposes of this Appeal.

With regard to the ground of rejection identified as Issue 2 above, the claims subject to that ground of rejection may be grouped together as follows for purposes of this Appeal:

1. Group 1 may include Claims 1-2, 9-11, 19-21, 44, and 46, which includes independent Claims 1, 11, 44, and 46;
2. Group 2 may include dependent Claims 3 and 12;
3. Group 3 may include dependent Claim 4;
4. Group 4 may include dependent Claims 5-6 and 13-14;
5. Group 5 may include dependent Claims 7 and 15-17;
6. Group 6 may include dependent Claims 8 and 18;
7. Group 7 may include Claims 22, 24-26, 30-33, 35-37, 41-43, and 45, which includes independent Claims 22, 33, and 45;
8. Group 8 may include dependent Claims 23 and 34;
9. Group 9 may include dependent Claims 27 and 38;
10. Group 10 may include dependent Claims 28 and 39;
11. Group 11 may include dependent Claims 29 and 40; and
12. Group 12 may include independent Claim 47.

### **Argument**

The rejection of Claims 1-10 and 33-43 as not being directed to statutory subject matter is improper and should be reversed by the Board. The rejection of Claims 1-47 under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran* is improper and should be reversed by the Board.

#### **I. Claims 1-10 and 33-43 Recite Patentable Subject Matter**

##### ***A. Overview***

Claims 1-10 and 33-43 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Appellant respectfully submits that these claims are clearly recite

patentable subject matter. Therefore, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

**B. Standard**

The patent laws define patentable subject matter as "any new and useful process, machine, manufacture or composition of matter, or any new and useful improvement thereto." *See* 35 U.S.C. § 101. When an abstract idea is reduced to a practical application, the abstract idea no longer stands alone if the practical application of the abstract idea produces a useful, concrete, and tangible result. This then satisfies the requirements of 35 U.S.C. § 101. *See In re Alappat*, 33 F.3d 1526, 1544, 31 U.S.P.Q. 2d 1545, 1557 (Fed. Cir. 1994); *see also State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373, 47 U.S.P.Q. 2d 1596, 1601-02 (Fed. Cir. 1998). While an abstract idea by itself may not satisfy the requirements of 35 U.S.C. § 101, an abstract idea when practically applied to produce a useful, concrete, and tangible result satisfies 35 U.S.C. § 101. *See AT&T Corp. v. Excel Comm. Inc.*, 172 F.3d 1352, 1357, 50 U.S.P.Q. 1447, 1452 (Fed. Cir. 1999) (stating that as technology progressed, the CCPA overturned some of the earlier limiting principles regarding 35 U.S.C. § 101 and announced more expansive principles formulated with computer technology in mind); *see also In re Musgrave*, 431 F.2d 882, 167 U.S.P.Q. 280 (CCPA 1970) (cited by the Federal Circuit in *AT&T Corp.*, 172 F.3d at 1356). Thus, producing a useful, concrete, and tangible result is the key to patentability according to *State Street* and other applicable case law.

"Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101." M.P.E.P. § 2106. Indeed, a method or process remains statutory even if some or all of the steps therein can be performed in the human mind, with the aid of the human mind, or because it may be necessary for one performing the method or process to think. *See In re Musgrave*, 431 F.2d at 893, 167 U.S.P.Q. at 289. As stated by the Federal Circuit in *State Street* and as explicitly confirmed in the M.P.E.P., "[T]ransformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces 'a useful, concrete, and tangible result' -- a final share price momentarily fixed for

recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." *State Street*, 149 F.3d at 1373, 47 U.S.P.Q. 2d at 1601-02; M.P.E.P. § 2106.

**C. Argument**

At the outset, Appellant notes that it is not clear why the amendments to Claims 1 and 33 presented in the Response to the August 13, 2003 Office Action "incurred a new rejection under 35 U.S.C. § 101," as asserted by the Examiner.<sup>1</sup> Although Appellant believed (and still believes, as demonstrated below) that all pending claims were directed to patentable subject matter without amendment, Appellant amended independent Claims 1 and 33 to further clarify that these claims recite computer-implemented systems and are directed to patentable subject matter. For consistency, Appellant also amended Claims 11, 22, and 47, which were not rejected under 35 U.S.C. § 101 in the Final Office Action, to further clarify that these claims recite methods performed using one or more computer systems and are directed to patentable subject matter. The Examiner specifically stated in the Final Office Action, "It is respectfully requested that Applicant amend these claims to explicitly recite at least one of the core steps in the body of the claims as being actively performed by technology (e.g., a computer)." (Final Office Action, Page 4) While Appellant did not necessarily agree that this was a requirement, Appellant amended the claim at the Examiner's request in the hopes of removing a ground of rejection for Appeal, in the event that the Examiner did not issue a Notice of Allowance in response to the Final Response. The Examiner, however, did not enter these amendments.

In any event, Appellant believes (and has always believed) that Claims 1-10 and 33-43 clearly recite patentable subject matter even without the amendments made in the Final Response.

The Examiner states that there is a two-prong test for determining whether claimed subject matter is statutory: (1) whether the invention is within the technological arts; and (2) whether the invention produces a useful, concrete, and tangible result. (Final Office Action,

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<sup>1</sup> The Examiner stated, "The previously pending rejections of claims 11-32 and 47 under 35 U.S.C. § 101 are withdrawn in response to Applicant's amendment of the claims; however, Applicant's amendments to other claims have incurred a new rejection under 35 U.S.C. § 101." (Final Office Action, Page 2)

Page 3) The Examiner acknowledges that Appellant's claims "produce a useful, concrete, and tangible result;" however, the Examiner argues that there is no recitation of technology in the body of the claims. In particular, the Examiner states, without citing any authority, that "[a]s to technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or field of use) or mere implication of employing a machine or article of manufacture to perform some or all of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble." (Final Office Action, Page 4)

Independent Claim 1, as an example, recites:

A system for optimizing a request-promise workflow between a first entity and a second entity downstream from the first entity, the first entity supplying supplies to the second entity in response to demand for supplies from the second entity, *the system* being associated with the second entity and *comprising one or more processing units and one or more memory units collectively operable to:*

*establish* a demand at the second entity for one or more supplies supplied by the first entity, the demand for the supplies based at least in part on a demand placed on the second entity by a third entity downstream from the second entity;

*optimize* the second entity's production associated with meeting the demand from the third entity to generate the request for the supplies;

*communicate* the request for the supplies to the first entity, a system associated with the first entity operable to optimize the first entity's production of the supplies using the request for the supplies as a first constraint to generate a promise for the supplies based on the request for the supplies;

*receive* the promise for the supplies from the first entity, the promise for the supplies having been generated according to an optimization of the first entity's production of the supplies using the request for the supplies as a first constraint, the promise for the supplies identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies;

if the promise for the supplies does not satisfy the request for the supplies, *generate* a second constraint according to the culprit identified in the promise for the supplies; and

if the promise for the supplies does not satisfy the request for the supplies, *reoptimize* the second entity's production associated with meeting the demand from the third entity using the second constraint *generated* according to the culprit identified in the promise for the supplies to *generate* a new request for the supplies.

Claim 1 is directed to a system and clearly recites that the system comprises “*one or more processing units and one or more memory units collectively operable to*” perform the limitations recited in the body of the claim, including establish, optimize, communicate, generate, receive, and reoptimize. Such a recitations clearly bring the claimed invention “within the technological arts.” Moreover, the M.P.E.P. states, “Any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation.” M.P.E.P. § 2111.02 citing *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 U.S.P.Q.2d 1962, 1966 (Fed. Cir. 1989) Thus, Appellant respectfully submits that the Examiner’s statements disregarding the limitations recited in the preamble to Appellant’s claims and implying that there is a requirement to include a “recitation of technology in the body of the claims” are simply incorrect. Additionally, Appellant notes that the Specification is replete with descriptions of the use of computer systems to perform various steps and functionality recited in Appellant’s claims.

For at least these reasons, Appellant respectfully submits that independent Claim 1 and its dependent claims clearly recite patentable subject matter. For substantially similar reasons, Appellant respectfully submits that independent Claim 23 and its dependent claims clearly recite patentable subject matter. Thus, Appellant respectfully submits that Claims 1-10 and 33-43 clearly recite patentable subject matter under 35 U.S.C. § 101, and request that the Board reverse the rejections under 35 U.S.C § 101.

## **II. Appellant’s Claims are Patentable over *Bhaskaran***

### ***A. Overview***

Claims 1-47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. A copy of *Bhaskaran* is attached as Appendix B. Appellant respectfully submits that Claims 1-47 are clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

### ***B. Standard***

The question raised under 35 U.S.C. § 103 is whether the prior art taken as a whole would suggest the claimed invention taken as a whole to one of ordinary skill in the art at the

time of the invention. *See* 35 U.S.C. § 103(a). Accordingly, even if all elements of a claim are disclosed in various prior art references, which is certainly not the case here as discussed below, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill at the time of the invention would have been prompted to modify the teachings of a reference or combine the teachings of multiple references to arrive at the claimed invention.

The M.P.E.P. sets forth the strict legal standard for establishing a *prima facie* case of obviousness based on modification or combination of prior art references. "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references where combined) must teach or suggest all the claim limitations." M.P.E.P. § 2142, 2143. The teaching, suggestion, or motivation for the modification or combination and the reasonable expectation of success must both be found in the prior art and cannot be based on an applicant's disclosure. *See Id.* (citations omitted). "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art" at the time of the invention. M.P.E.P. § 2143.01. Even the fact that references *can* be modified or combined does not render the resultant modification or combination obvious unless the prior art teaches or suggests the desirability of the modification or combination. *See Id.* (citations omitted). Moreover, "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03 (citations omitted).

The governing Federal Circuit case law makes this strict legal standard even more clear.<sup>2</sup> According to the Federal Circuit, "a showing of a suggestion, teaching, or motivation

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<sup>2</sup> Note M.P.E.P. 2145 X.C. ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.").

to combine or modify prior art references is an essential component of an obviousness holding." *In re Sang-Su Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000)). "Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved." *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). However, the "range of sources available . . . does not diminish the requirement for actual evidence." *Id.* Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." *In re Mills*, 916 F.2d at 682, 16 U.S.P.Q.2d at 1432. See also *In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998) (holding a *prima facie* case of obviousness not made where the combination of the references taught every element of the claimed invention but did not provide a motivation to combine); *In Re Jones*, 958 F.2d 347, 351, 21 U.S.P.Q.2d 1941, 1944 (Fed. Cir. 1992) ("Conspicuously missing from this record is any evidence, other than the PTO's speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at" the claimed invention.). Even a determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed modification or combination is not sufficient to establish a *prima facie* case of obviousness. See *In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988).

In addition, the M.P.E.P. and the Federal Circuit repeatedly warn against using an applicant's disclosure as a blueprint to reconstruct the claimed invention. For example, the M.P.E.P. states, "The tendency to resort to 'hindsight' based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." M.P.E.P. § 2142. The governing Federal Circuit cases are equally clear. "A critical step in analyzing the patentability of claims pursuant to [35 U.S.C. § 103] is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. . . . Close adherence to this methodology is especially



important in cases where the very ease with which the invention can be understood may prompt one 'to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.'" *In re Kotzab*, 217 F.3d 1365, 1369, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted). In *In re Kotzab*, the Federal Circuit noted that to prevent the use of hindsight based on the invention to defeat patentability of the invention, the court requires the Examiner to show a sufficient motivation in the prior art to combine the references that allegedly create the case of obviousness. See *id.* See also, e.g., *Grain Processing Corp. v. American Maize-Products*, 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988). Similarly, in *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board, explaining that the required evidence of such a teaching, suggestion, or motivation is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted).

**C. Bhaskaran**

*Bhaskaran* merely discloses a method and apparatus for collaboratively managing supply chains. In particular, *Bhaskaran* discloses an active collaboration technology in an open architectural framework that delivers information and decision support tools in a timely, contextual, and role sensitive manner to present a collaborative dynamic decision-making capability to a community of role players within a supply chain process. (Abstract; Column 2, Lines 22-27) According to the system disclosed in *Bhaskaran*, role players collaborate through domain task-specific active documents. (Column 2, Lines 32-33) Access to the active documents is based on the role of the user and is governed by access control lists of role players. (Column 2, Lines 39-41)

**D. Group 1 (Claims 1-2, 9-11, 19-21, 44, and 46)**

Claims 1-2, 9-11, 19-21, 44, and 46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that these claims are clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Claims 1-2, 9-11, 19-21, 44, and 46 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims. In addition, claims excluded from Group 1 that are subject to the same ground of rejection and that depend on independent Claims 1 and 11, respectively, recite patentable distinctions over the prior art beyond those recited in independent Claims 1 and 11 and cannot be properly grouped with independent Claims 1 and 11 for purposes of this Appeal.

**1. *Bhaskaran* Fails to Disclose, Teach, or Suggest Various Limitations Recited in Appellant's Claims**

*Bhaskaran*, whether considered alone or in combination with knowledge generally available to one having ordinary skill in the art at the time of invention, fails to disclose, teach, or suggest various limitations recited in Appellant's independent claims. Appellant discusses Claim 1 as an example.

The Examiner relies, in part, on portions of the following passage in *Bhaskaran* as disclosing certain limitations recited in Claim 1:

[T]he supply chain encounters many problems from material constraints from the parts supply vendors to capacity constraints at the production facilities (e.g., sub and final assemblers) to a volatile demand from various global markets. It is thus imperative that the many role players determine, at least, (i) what components need to be delivered to which sub and final assemblers, (i.e., usually depending on where the greatest local demand for the assembled product arises or the need for the production capabilities of the individual sub and final assemblers), (ii) when to deliver the components to the sub and final assemblers and (iii) when and where to deliver the assembled components to the distributor.

Thus, in order for the supply chain to function properly and efficiently, each role player in the business process must coordinate their activities with other role players so that the supply and demand of the components and assembled product are synchronized within the supply chain.

(Column 4, Lines 1-17; *see* Final Office Action, Pages 5-6 and 10) This passage generally discloses that supply chain entities are able to collaborate to meet market demand, taking into consideration certain constraints.

However, nowhere does the above passage, nor the remainder of *Bhaskaran*, disclose, teach, or suggest in any manner whatsoever “a culprit” or its associated limitations as specifically recited in Claim 1. At a minimum, *Bhaskaran* fails to disclose, teach, or suggest:

- at a second entity, *receiving a promise for the supplies from the first entity identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies to the first entity if the promise for the supplies does not satisfy the request for the supplies to the first entity*;
- at the second entity, *if the promise for the supplies does not satisfy the request for the supplies to the first entity, generating a second constraint according to the culprit identified in the promise for the supplies*; and
- at the second entity, *if the promise for the supplies does not satisfy the request for the supplies to the first entity, reoptimizing the second entity's production associated with meeting the demand from the third entity using the second constraint generated according to the culprit identified in the promise for the supplies to generate a new request for the supplies to the first entity*.

The Examiner asserts, “In col. 4, lines 1-5, *Bhaskaran* states that the causes, or culprits, of constraints include anything from material constraints to capacity constraints to constraints associated with a ‘volatile demand from various global markets.’” (Final Office Action, Page 5) Appellant first notes that this passage of *Bhaskaran* (reproduced in the above-cited portion of *Bhaskaran*) never uses the term “culprit” and fails to disclose, teach, or suggest any analogous information being communicated between supply chain entities. Instead, this passage of *Bhaskaran* merely recites, “However, the supply chain encounters many problems from material constraints from the parts supply vendors to capacity constraints at the production facilities (e.g., sub and final assemblers) to volatile demand from various global markets.” (Column 4, Lines 1-5) The Examiner further states that “an assembler’s production capabilities exemplify a culprit as the reason why the assembler cannot produce the requested quantity of items.” (Final Office Action, Page 10) A constraint may describe a *limitation* (e.g., material constraints, capacity constraints, constraints associated with volatile demand from various global markets, etc.) on the ability of a supply

chain entity to satisfy a request for supplies. A constraint does not, however, describe a *cause* of such a limitation. The disclosure in *Bhaskaran* of acting according to generalized constraints present in a supply chain certainly does not disclose, teach, or suggest, as specifically recited in Claim 1:

- at a second entity, *receiving a promise for the supplies from the first entity identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies to the first entity if the promise for the supplies does not satisfy the request for the supplies to the first entity*;
- at the second entity, *if the promise for the supplies does not satisfy the request for the supplies to the first entity, generating a second constraint according to the culprit identified in the promise for the supplies*; and
- at the second entity, *if the promise for the supplies does not satisfy the request for the supplies to the first entity, reoptimizing the second entity's production associated with meeting the demand from the third entity using the second constraint generated according to the culprit identified in the promise for the supplies to generate a new request for the supplies to the first entity*.

The Examiner further states, “Bhaskaran also provides the specific scenario in which one assembler does not have the production capacity to fill a request component demand; therefore, another assembler is notified that he/she needs to make up for this lack of production capacity of the first assembler.” (Final Office Action, Page 10; citations omitted) Even if true, this statement merely discusses entities in a supply chain collaborating to meet capacity. Nowhere does this scenario disclosed in *Bhaskaran* disclose, teach, or suggest “a culprit,” let alone the various limitations associated with the culprit as specifically recited in Claim 1.

The Examiner further repeatedly references the vague statement that “[t]he overall supply chain planning is optimized and reoptimized for all entities in the supply chain every time a new scenario is proposed,” as disclosing certain limitations recited in Claim 1. Appellant respectfully submits that this vague statement in *Bhaskaran* does not disclose, teach, or suggest the very concrete limitations specifically recited in Claim 1, including, at a minimum:

- at a second entity, *receiving a promise for the supplies from the first entity identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies to the first entity if the promise for the supplies does not satisfy the request for the supplies to the first entity*;

- at the second entity, *if the promise for the supplies does not satisfy the request for the supplies to the first entity, generating a second constraint according to the culprit identified in the promise for the supplies*; and
- at the second entity, *if the promise for the supplies does not satisfy the request for the supplies to the first entity, reoptimizing the second entity's production associated with meeting the demand from the third entity using the second constraint generated according to the culprit identified in the promise for the supplies to generate a new request for the supplies to the first entity*.

The Examiner appears to acknowledge that *Bhaskaran* does not disclose “if the promise for the supplies does not satisfy the request for the supplies, generate a second constraint according to the culprit identified in the promise for the supplies” and “if the promise for the supplies does not satisfy the request for the supplies, reoptimize the second entity's production associated with meeting the demand from the third entity using the second constraint generated according to the culprit identified in the promise for the supplies to generate a new request for the supplies,” as recited in Claim 1. However, the Examiner argues that “it is old and well known in the area of supply and demand that demand requirements will not fully be met if the supply is not available. In other words if there is a material or production capacity shortage at any level . . . upstream from the distributor . . . , then the distributor has no choice but to re-evaluate his/her ability to provide all demanded products to the global marketplace.” (Final Office Action, Page 11) Even if the Examiner's statements are true (which Appellant does not necessarily concede), none of this discloses, teaches, or suggests “a culprit,” let alone the various limitations associated with the culprit, as specifically recited in Claim 1.

Based on this above-discussed reasoning, the Examiner asserts that “it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to adapt *Bhaskaran* to reoptimize a second entity's production associated with meeting a demand . . . when it is determined that a first entity can only meet a second constraint due to a culprit impeding a first constraint in order to facilitate the overall optimization and reoptimization of supply chain production (e.g., taking into account a promise constraint and an optimization objective) when it is determined that previously promised demand (e.g., to a global marketplace) cannot be fulfilled by the supply chain as a whole.” (Final Office Action, Page 11) However, as Appellant demonstrated above, *Bhaskaran* does not disclose, teach, or

suggest identification of “a culprit” and its associated limitations as specifically recited in Claim 1. Thus, it certainly would not have been obvious to one having ordinary skill in the art at the time of invention to modify *Bhaskaran* in the manner the Examiner proposes.

**2. The Proposed Modifications to *Bhaskaran* are Improper**

Moreover, the rejection of Appellant’s claims is also improper because the Examiner has not shown the required teaching, suggestion, or motivation in *Bhaskaran* or in the knowledge generally available to those of ordinary skill in the art at the time of the invention to modify *Bhaskaran* in the manner the Examiner proposes. The rejected claims are allowable for at least this reason.

Appellant reiterates the legal standard incumbent on the Examiner for establishing a *prima facie* case of obviousness (as set forth above) with which the Board is no doubt intimately familiar.

With regard to the proposed modifications to *Bhaskaran*, the Examiner states:

Bhaskaran does not expressly discuss what occurs if, for example, no assemblers can meet the component demand ultimately required to fulfill demand of assembled products to the end-customer (e.g., Bhaskaran’s “global marketplace”). However, it is old and well-known in the area of supply and demand that demand requirements will not fully be met if the supply is not available. In other words, if there is a material or production capacity shortage collectively at any level in Bhaskaran’s supply chain upstream from the distributor (e.g., at the vendor, subassembler, or final assembler), then the distributor has no choice but to reevaluate his/her ability to provide all demanded products to the global marketplace. Therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of Applicant’s invention to adapt Bhaskaran to reoptimize a second entity’s production associated with meeting a demand (e.g., the demand promised by a distributor to a global marketplace) when it is determined that a first entity can only meet a second constraint due to a culprit impeding a first constraint in order to facilitate the overall optimization and reoptimization of supply chain production (e.g., taking into account a promise constraint and an optimization objective) when it is determined that previously promised demand (e.g., to a global marketplace) cannot be fulfilled by the supply chain as a whole.

(Final Office Action, Page 11)

Appellant reiterates that *Bhaskaran* fails to disclose, teach or suggest “a culprit” and its associated limitations as specifically recited in Claim 1. The Examiner has not cited any other reference as allegedly disclosing “a culprit” and its associated limitations as specifically recited in Claim 1. It certainly would not have been obvious to one of ordinary skill in the art at the time of invention to even attempt to modify *Bhaskaran* to include “a culprit” and its associated limitations as specifically recited in Claim 1, as the Examiner proposes. Even more clearly, it certainly would not have been obvious to one of ordinary skill in the art at the time of the invention, based solely on the prior art, to *actually* modify *Bhaskaran* to include “a culprit” and its associated limitations as specifically recited in Claim 1, which would be required to establish a *prima facie* case of obviousness under the M.P.E.P. and the governing Federal Circuit case law. Thus, the Examiner’s statement that “it would have been obvious . . . to adapt *Bhaskaran* to reoptimize a second entity’s production associated with meeting a demand (e.g., the demand promised by a distributor to a global marketplace) when it is determined that a first entity can only meet a second constraint due to a culprit impeding a first constraint in order to facilitate the overall optimization and reoptimization of supply chain production (e.g., taking into account a promise constraint and an optimization objective) when it is determined that previously promised demand (e.g., to a global marketplace) cannot be fulfilled by the supply chain as a whole,” assumes that *Bhaskaran* does disclose a “culprit” identified in a promise for one or more supplies and its associated limitations. However, such a “culprit,” as well as other limitations, are not disclosed, taught, or suggested by *Bhaskaran*, and the Examiner’s proposed modifications to *Bhaskaran* do not address these deficiencies of *Bhaskaran*.

Additionally, Appellants respectfully note, “[T]he factual inquiry whether to combine references must be thorough and searching.” *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 U.S.P.Q.2d 1001, 1008 (Fed. Cir. 2001). Thus, the burden is on the examiner to identify concrete evidence in the record to support his conclusion that it would have been obvious to modify the teachings of the cited references to achieve the claimed invention. *See, In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1316-17 (Fed. Cir. 2000). The Examiner’s assertion that it would have been obvious to modify *Bhaskaran* fails

to provide a thorough and searching factual inquiry and does not identify any concrete evidence in the record for modifying *Bhaskaran* in the manner proposed by the Examiner.

Accordingly, since the prior art fails to provide the required teaching, suggestion, or motivation to modify *Bhaskaran* in the manner the Examiner proposes, Appellant respectfully submits that the Examiner's conclusions set forth in the Office Action fall well short of the requirements set forth in the M.P.E.P. and the governing Federal Circuit case law for demonstrating a *prima facie* case of obviousness. Thus, Appellant respectfully submits that the Examiner's proposed modification of *Bhaskaran* appears to be merely an attempt, with the benefit of hindsight, to reconstruct Appellant's claims and is unsupported by the teachings of *Bhaskaran*. Appellant respectfully submits that the rejection must therefore be withdrawn.

### **3. Conclusion with respect to Group 1**

For at least these reasons, *Bhaskaran* fails to support the obviousness rejection of independent Claim 1 and its dependent claims. For analogous reasons, *Bhaskaran* fails to support the obviousness rejections of independent Claims 11, 44, and 46 and their dependent claims (as well as independent Claims 22, 33, and 45, which are not a part of Group 1 because they recite further patentable distinctions over *Bhaskaran*). These claims are therefore patentable over *Bhaskaran*. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

#### ***E. Group 2 (Claims 3 and 12)***

Dependent Claims 3 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that these claims are clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Dependent Claims 3 and 12 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite



patentable distinctions over the prior art beyond those recited in independent Claims 1 and 11 from which Claims 3 and 12 depend. As another example, Claims 3 and 12 recite patentable distinctions over the prior art different than those recited in other claims that depend from independent Claims 1 and 11.

Dependent Claims 3 and 12 depend from independent Claims 1 and 11, respectively, which Appellant has shown above to be clearly patentable over *Bhaskaran*, and are patentable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1 and 11, dependent Claims 3 and 12 are patentable because they recite further patentable distinctions over *Bhaskaran*.

For example, Claim 3 recites:

The system of Claim 1, further operable to repeat the following until the promise for the supplies satisfies the request for the supplies:

optimizing the second entity's production associated with meeting the demand from the third entity to generate a request for the supplies;

communicating the request for the supplies to the first entity;

receiving a promise for the supplies from the first entity based on the request for the supplies, the promise for the supplies having been generated according to an optimization of the first entity's production of the supplies using the request for the supplies as a first constraint, the promise for the supplies identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies;

if the promise for the supplies does not satisfy the request for the supplies, generating a second constraint according to the culprit identified in the promise for the supplies; and

reoptimizing the second entity's production associated with meeting the demand from the third entity using the second constraint generated according to the culprit identified in the promise for the supplies to generate a new request for the supplies if the promise for the supplies does not satisfy the request for the supplies.

Dependent Claim 12 recites substantially similar limitations.

*Bhaskaran* simply fails to disclose, teach, or suggest repeating these very concrete steps, let alone repeating these very concrete steps “until the promise for the supplies satisfies the request for the supplies,” as recited in Claims 3 and 12. *Bhaskaran* merely discloses, for

example, that the “active documents integrate the business process, organization of role players and advanced planning decision engines to provide a unified view of the supply chain so that the role player may collaboratively address the supply chain management problem. The underlying information that characterizes the state of the supply chain is garnered to optimize the overall supply chain using planning and scheduling applications.” (Column 4, Lines 41-48) Such vague statements regarding the “optimization” of a supply chain fail to disclose, teach, or suggest the specific limitations recited in Claims 3 and 12. This is even more clear in light of the fact that *Bhaskaran* fails to disclose, teach, or suggest a “culprit” and its associated limitations.

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of dependent Claims 3 and 12. These claims are therefore patentable over *Bhaskaran*. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

***F. Group 3 (Claim 4)***

Dependent Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that Claim 4 clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that this rejection is improper and should be reversed by the Board.

Dependent Claim 4 is separately patentable from every other claim subject to the same ground of rejection. Claim 4 recites limitations that are substantially different from limitations recited in other claims and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, Claim 4 recites patentable distinctions over the prior art beyond those recited in independent Claim 1 from which Claim 4 depends. As another example, Claim 4 recites patentable distinctions over the prior art different than those recited in other claims that depend from independent Claim 1.

Dependent Claim 4 depends from independent Claim 1, which Appellant has shown above to be clearly patentable over *Bhaskaran*, and is allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent

Claim 1, dependent Claim 4 is patentable because it recites further patentable distinctions over *Bhaskaran*.

For example, dependent Claim 4 recites that “the system associated with the first entity is further operable to optimize the first entity's production of the supplies *independently* of the second entity” and “the system associated with the second entity is further operable to optimize the second entity's production associated with meeting the demand from the third entity *independently* of the first entity.” One portion of *Bhaskaran* on which the Examiner relies as allegedly disclosing this limitation states that “the role players collaboratively create and submit a scenario for the supply, production and distribution of a particular product.” (See Column 7, Lines 53-55; Final Office Action, Page 7) This cited portion also states that “the scenario is collaboratively revised, if necessary, by the participating role players according to the analyzed data.” (See Column 7, Lines 60-62; Final Office Action, Page 7) This cited portion further states, “If the plan is not submitted . . . a new scenario is collaboratively devised by the participating role players and resubmitted . . . . If the plan is submitted . . . a collaborative decision is made whether to approve the plan in order to commence the supply, production and distribution of the product.” (See Column 7, Line 63 through Column 8, Line 2; Final Office Action, Page 7) In fact, *Bhaskaran* is replete with discussion and emphasis on the collaborative nature of the system disclosed in *Bhaskaran*. At a minimum, such collaborative involvement in each step of the process disclosed in *Bhaskaran* clearly fails to disclose, teach, or suggest that “the system associated with the first entity is further operable to optimize the first entity's production of the supplies *independently* of the second entity” and “the system associated with the second entity is further operable to optimize the second entity's production associated with meeting the demand from the third entity *independently* of the first entity,” as recited in dependent Claim 4.

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of dependent Claim 4. Claim 4 is therefore patentable over *Bhaskaran*. Appellant respectfully submits that this rejection is improper and should be reversed by the Board.

**G. Group 4 (Claims 5-6 and 13-14)**

Dependent Claims 5-6 and 13-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that these claims are clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Dependent Claims 5-6 and 13-14 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the prior art beyond those recited in independent Claims 1 and 11 from which Claims 5-6 and 13-14 depend. As another example, Claims 5-6 and 13-14 recite patentable distinctions over the prior art different than those recited in other claims that depend from independent Claims 1 and 11.

Dependent Claims 5-6 and 13-14 depend from independent Claims 1 and 11, respectively, which Appellant has shown above to be clearly patentable over *Bhaskaran*, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1 and 11, dependent Claims 5-6 and 13-14 are patentable because they recite further patentable distinctions over *Bhaskaran*.

For example, dependent Claim 5 recites that “the request for the supplies comprises a first request for a first supply and a second request for a second supply” and “the promise for the supplies comprises a first promise for the first supply and a second promise for the second supply, the promise for the supplies identifying the second supply as the culprit if the promise for the supplies does not satisfy the request for the supplies.” Dependent Claim 13 recites substantially similar limitations.

As purportedly disclosing these limitations, the Examiner cites the following portions of *Bhaskaran*:

- “However, the supply chain encounters many problems from material constraints from the parts supply vendors to capacity constraints at the

- production facilities (e.g., sub and final assemblers) to a volatile demand from various global markets.” (Column 4, Lines 1-5)
- “The underlying information that characterizes the state of the supply chain is garnered to optimize the overall supply chain using planning and scheduling applications.” (Column 4, Lines 45-48)
  - “Once the demand planner peruses the information and any tools (not shown), the demand planner submits it for further action by clicking on the ready for optimization action button.” (Column 6, Lines 20-23)
  - “In Step S910, the business planning process begins. In Step S920, the role players collaboratively create and submit a scenario for the supply, production and distribution of a particular product. In Step S930, well known business tools, such as the Supply Capability Engine (SCE) (e.g., a constrained based supply chain planning and optimization tool) are initiated in order to formulate a business plan. In Step S940, the scenario is analyzed and all exceptions are highlighted. In Step S950, the scenario is collaboratively revised, if necessary, by the participating role players according to the analyzed data. In Step S960, a decision is made whether to submit the plan to the participating role players. If the plan is not submitted, in Step S965, a new scenario is collaboratively devised by the participating role players and resubmitted in Step S920.” (Column 7, Lines 52-66)
  - “New work orders may be generated by, for example, the business tools associated with the system of the present invention. However, in embodiments, the vendors and assemblers may collectively collaborate with one another to devise a production and delivery scheme, via the active document window 300, asynchronous window 600 or synchronous 700 window, in order to devise new work orders. In response to the new work orders, the vendors and assemblers may immediately readjust their performance and/or supply schedules in accordance with the business plan devised based on the new scenario.” (Column 8, Lines 23-34)
  - “However, if one assembler 60, for example, cannot increase its production, it may also access the scenario window and initiate a new scenario based on its particular circumstances. In this instance, the business application then automatically readjusts the production capabilities of assembler 70 and notifies the assembler 70, via the active document window 800, of its new increased production requirements. During this process, any or all of the role players may collectively and collaboratively adjust and refine (i) the scenario, (ii) their specific requirements, or (iii) redefine their responsibilities with the supply chain by accessing the active document window 300, asynchronous window 600 or synchronous 700 window. Once a new scenario is again devised, all of the appropriate role players will be notified of their respective new work orders.” (Column 8, Lines 35-49)

(See Final Office Action, Pages 7-8) The Examiner relies on the above-cited portions of *Bhaskaran* in rejecting many of Appellant’s claims. To avoid burdening the record,

Appellant will refer to these as the “Cited Portions” throughout the remainder of the Appeal Brief.

After citing the Cited Portions, the Examiner concludes that “[c]omponents can be produced by various entities to create a final assembled product.” (See Final Office Action, Pages 7-8) Whether or not this is true, such a teaching does not disclose, teach, or suggest *“the request for the supplies comprises a first request for a first supply and a second request for a second supply”* and *“the promise for the supplies comprises a first promise for the first supply and a second promise for the second supply, the promise for the supplies identifying the second supply as the culprit if the promise for the supplies does not satisfy the request for the supplies,”* as recited in Claims 5 and 13. In fact, the cited excerpts from Column 8, for example, apparently address a scenario in which to assemblers are responsible for providing the same supply to a vendor. When one assembler cannot meet the requirements of the vendor, a second assembler is required to “up” its production of the supply. Such a scenario fails to disclose, teach, or suggest *“a first request for a first supply”* and *“a second request for a second supply,”* let alone *“the promise for the supplies comprises a first promise for the first supply and a second promise for the second supply, the promise for the supplies identifying the second supply as the culprit if the promise for the supplies does not satisfy the request for the supplies,”* as recited in Claims 5 and 13. Indeed none of these cited portions disclose, teach, or suggest the limitations recited in Claims 5 and 13.

As another example, dependent Claim 6 depends from Claim 5 and recites that “the second promise does not satisfy the second request for the second supply, the promise for the supplies identifying the second supply as the culprit” and “the system associated with the second entity is further operable to optimize the second entity's production associated with meeting the demand from the third entity to generate a new request for the supplies using the second promise for the second supply to generate the second constraint.” Dependent Claim 14 depends from Claim 13 and recites substantially similar limitations to those recited in dependent Claim 6.

The Examiner again cites the Cited Portions and further states, “Components can be produced by various entities to create a final assembled product. Any entity can be the source of a culprit.” (Final Office Action, Page 8) Again, the Cited Portions of *Bhaskaran* simply do not disclose the very concrete limitations recited in Claims 6 and 14. Again, the excerpts from Column 8, for example, apparently address a scenario in which to assemblers are responsible for providing the same supply to a vendor. When one assembler cannot meet the requirements of the vendor, a second assembler is required to up its production of the supply. Such a scenario fails to disclose, teach, or suggest that “*the second promise does not satisfy the second request for the second supply, the promise for the supplies identifying the second supply as the culprit*” and that “*the system associated with the second entity is further operable to optimize the second entity's production associated with meeting the demand from the third entity to generate a new request for the supplies using the second promise for the second supply to generate the second constraint,*” as recited in Claims 6 and 14.

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of dependent Claims 5-6 and 13-14. These claims are therefore patentable over *Bhaskaran*. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

***H. Group 5 (Claims 7 and 15-17)***

Dependent Claims 7 and 15-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that these claims are clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Dependent Claims 7 and 15-17 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the prior art beyond those recited in independent Claims 1 and 11 from which Claims 7 and 15-17 depend. As another example, Claims 7 and 15-17 recite

patentable distinctions over the prior art different than those recited in other claims that depend from independent Claims 1 and 11.

Dependent Claims 7 and 15-17 depend from independent Claims 1 and 11, respectively, which Appellant has shown above to be clearly patentable over *Bhaskaran*, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1 and 11, dependent Claims 7 and 15-17 are patentable because they recite further patentable distinctions over *Bhaskaran*.

For example, dependent Claim 7 recites:

The system of Claim 1, wherein:  
the request for the supplies comprises a bundled request for at least two supplies for the second entity's production associated with meeting the demand from the third entity;  
the promise for the supplies in response to the bundled request for the at least two supplies comprises a first promise, a second promise, and the culprit, the culprit identifying the second promise as the cause for the promise for the supplies not satisfying the bundled request for the at least two supplies;  
and  
the system associated with the second entity is operable to reoptimize the second entity's production associated with meeting the demand from the third entity to generate a new request for the at least two supplies using the second promise to generate the second constraint.

As allegedly disclosing these limitations, the Examiner cites the Cited Portions of *Bhaskaran* and then states "Components can be produced by various entities to create a final assembled product. Any entity can be the source of a culprit." (Final Office Action, Page 9) First, the Cited Portions of *Bhaskaran* simply fail to disclose, teach, or suggest the very concrete limitations recited in Claim 7. Second, whether or not it is true that "any entity can be the source of a culprit," as asserted by the Examiner, Appellant does not see what bearing that disclosure, teaching, or suggestion has on whether *Bhaskaran* discloses, teaches, or suggests the limitations of Claim 7.

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of dependent Claims 7. For analogous reasons, *Bhaskaran* fails to support the obviousness rejections of dependent Claims 15-17. Claims 7 and 15-17 are therefore patentable over



*Bhaskaran*. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

***I. Group 6 (Claims 8 and 18)***

Dependent Claims 8 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that these claims are clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Dependent Claims 8 and 18 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the prior art beyond those recited in independent Claims 1 and 11 from which Claims 8 and 18 depend. As another example, Claims 8 and 18 recite patentable distinctions over the prior art different than those recited in other claims that depend from independent Claims 1 and 11.

Dependent Claims 8 and 18 depend from independent Claims 1 and 11, respectively, which Appellant has shown above to be clearly patentable over *Bhaskaran*, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1 and 11, dependent Claims 8 and 18 are patentable because they recite further patentable distinctions over *Bhaskaran*.

For example, Claim 8 recites that “the promise for the supplies comprises an optimization objective and a promise constraint” and “the system associated with the second entity is operable to reoptimize the second entity's production associated with meeting the demand from the third entity to generate a new request for the supplies using the promise constraint and the optimization objective.” Dependent Claim 18 recites substantially similar limitations.

As allegedly disclosing these limitations, the Examiner cites the Cited Portions of *Bhaskaran* and then states “The overall supply chain planning is optimized and reoptimized for all entities in the supply chain every time a new scenario is proposed.” (Final Office Action, Pages 9-10) First, the Cited Portions of *Bhaskaran* simply fail to disclose, teach, or suggest the very concrete limitations recited in Claims 8 and 18. Second, whether or not it is true that the “overall supply chain planning is optimized and reoptimized for all entities in the supply chain every time a new scenario is proposed,” as asserted by the Examiner, Appellant does not see what bearing that disclosure, teaching, or suggestion has on Claims 8 and 18. The Examiner does not cite to any portion of *Bhaskaran* that discloses, teaches, or suggests a promise for supplies comprising “*an optimization objective*” and a “*promise constraint*,” or that “the system associated with the second entity is operable to reoptimize the second entity’s production associated with meeting the demand from the third entity to generate a new request for the supplies *using the promise constraint and the optimization objective*,” as recited in Claims 8 and 18.

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of dependent Claims 8 and 18. These claims are therefore patentable over *Bhaskaran*. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

**J. Group 7 (Claims 22, 24-26, 30-33, 35-37, 41-43, and 45)**

Claims 22, 24-26, 30-33, 35-37, 41-43, and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that these claims are clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Claims 22, 24-26, 30-33, 35-37, 41-43, and 45 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims. For example, independent Claims 22, 33, and 45 recite patentable distinctions over *Bhaskaran* beyond those recited in independent Claims 1, 11, 44, and 46. In addition, claims excluded from Group 7 that are subject to the same ground of rejection and that depend on independent Claims 22 and 33,

respectively, recite patentable distinctions over the prior art beyond those recited in independent Claims 22 and 33 and cannot be properly grouped with independent Claims 1 and 11 for purposes of this Appeal.

Independent Claims 22, 33, and 45 recite certain analogous limitations to those recited in independent Claims 1, 11, 44, and 46 (as well as independent Claim 47 discussed below), which Appellant has shown above to be clearly patentable over *Bhaskaran*, and are allowable for substantially similar reasons to those discussed above with reference to independent Claims 1, 11, 44, and 46. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1, 11, 44, and 46, independent Claims 22, 33, and 45 are patentable because they recite further patentable distinctions over *Bhaskaran*.

For example, *Bhaskaran*, whether considered alone or in combination with knowledge generally available to one of ordinary skill in the art at the time of invention, fails to disclose, teach, or suggest at least the following limitations recited in Claim 22 (and similarly in Claims 33 and 45):

- communicating *the first request for the first supply to a first supplier*;
- communicating *the second request for the second supply to a second supplier*;
- receiving *a first promise for the first supply from the first supplier*, the first promise for the first supply *identifying a first culprit as a cause for the first promise for the first supply not satisfying the first request for the first supply if the first promise for the first supply does not satisfy the first request for the first supply*;
- receiving *a second promise for the second supply from the second supplier*, the second promise for the second supply *identifying a second culprit as a cause for the second promise for the second supply not satisfying the second request for the second supply if the second promise for the second supply does not satisfy the second request for the second supply*; and
- if the first promise for the first supply does not satisfy the first request for the first supply or the second promise for the second supply does not satisfy the second request for the second supply, *generating a constraint according to the first culprit identified in the first promise for the first supply or the second culprit identified in the second promise for the second supply, respectively, and reoptimizing the production associated with meeting the demand from the third party in accordance with the constraint to generate a new first request for the first supply and a new second request for the second supply*.

As discussed above with reference to independent Claim 1, *Bhaskaran* does not disclose, teach, or suggest a “culprit” or receiving a promise for a supply identifying a “culprit” as a cause for the promise for the supply not satisfying the request for the supply if the promise for the supply does not satisfy the request for the supply. Again, Appellant respectfully submits that *Bhaskaran*’s vague disclosure of optimization in the supply chain does not disclose, teach, or suggest the concrete limitations recited in Appellant’s claims. Even more clearly, *Bhaskaran* fails to disclose, teach, or suggest communicating requests for first and second supplies to satisfy a demand from a third party, and communicating a first request for the first supply to a first supplier and a second request for a second supply to a second supplier, as recited in Claim 22 (and similarly in Claims 33 and 45). *Bhaskaran* also fails to disclose, teach, or suggest “receiving **a first promise for the first supply from the first supplier**, the first promise for the first supply **identifying a first culprit as a cause for the first promise for the first supply not satisfying the first request for the first supply if the first promise for the first supply does not satisfy the first request for the first supply**” and “receiving **a second promise for the second supply from the second supplier**, the second promise for the second supply **identifying a second culprit as a cause for the second promise for the second supply not satisfying the second request for the second supply if the second promise for the second supply does not satisfy the second request for the second supply**,” as recited in Claim 22 (and similarly in Claims 33 and 45). Additionally, *Bhaskaran* fails to disclose, teach, or suggest “if the first promise for the first supply does not satisfy the first request for the first supply or the second promise for the second supply does not satisfy the second request for the second supply, **generating a constraint according to the first culprit identified in the first promise for the first supply or the second culprit identified in the second promise for the second supply, respectively, and reoptimizing the production associated with meeting the demand from the third party in accordance with the constraint to generate a new first request for the first supply and a new second request for the second supply**,” as recited in Claim 22 (and similarly in Claims 33 and 45).

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of independent Claim 22 and its dependent claims. For analogous reasons, *Bhaskaran* fails to support the obviousness rejections of independent Claims 33 and 45 and their dependent

claims. These claims are therefore patentable over *Bhaskaran*. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

**K. Group 8 (Claims 23 and 34)**

Dependent Claims 23 and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that these claims are clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Dependent Claims 23 and 34 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the prior art beyond those recited in independent Claims 22 and 33 from which Claims 23 and 34 depend. As another example, Claims 23 and 34 recite patentable distinctions over the prior art different than those recited in other claims that depend from independent Claims 22 and 33.

Dependent Claims 23 and 34 depend from independent Claims 22 and 33, respectively, which Appellant has shown above to be clearly patentable over *Bhaskaran*, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 22 and 33, dependent Claims 23 and 34 are patentable because they recite further patentable distinctions over *Bhaskaran*.

For example, dependent Claim 23 recites:

The method of Claim 22, further comprising repeating the following until the first promise for the first supply satisfies the first request for the first supply and the second promise for the second supply satisfies the second request for the second supply:

optimizing the production associated with meeting the demand from the third party to generate a first request for a first supply and a second request for a second supply needed to meet the demand from the third party;

communicating the first request for the first supply to the first supplier;

communicating the second request for the second supply to the second supplier;

receiving a first promise for the first supply from the first supplier, the first promise for the first supply identifying a first culprit as a cause for the first promise for the first supply not satisfying the first request for the first supply if the first promise for the first supply does not satisfy the first request for the first supply;

receiving a second promise for the second supply from the second supplier, the second promise for the second supply identifying a second culprit as a cause for the second promise for the second supply not satisfying the second request for the second supply if the second promise for the second supply does not satisfy the second request for the second supply;

determining whether the first promise for the first supply satisfies the first request for the first supply;

determining whether the second promise for the second supply satisfies the second request for the second supply; and

if the first promise for the first supply does not satisfy the first request for the first supply or the second promise for the second supply does not satisfy the second request for the second supply, generating a constraint according to the first culprit identified in the first promise for the first supply or the second culprit identified in the second promise for the second supply, respectively, and reoptimizing the production associated with meeting the demand from the third party in accordance with the constraint to generate a new first request for the first supply and a new second request for the second supply.

Dependent Claim 34 recites substantially similar limitations.

With respect to Claim 23, the Examiner states “Claims 22-32 recite limitations already addressed by the rejection of claims 1-21 above; therefore, the same rejection applies.” (Final Office Action, Page 13) While it may be true that Claim 23 recites certain limitations that are analogous to limitations recited in Claims 3 and 12, for example (and is allowable for at least those reasons discussed above with respect to Claims 3 and 12), Claim 23 also recites limitations not present in Claims 3 and 12 that provide further patentable distinctions over *Bhaskaran*. For example, *Bhaskaran* simply fails to disclose, teach, or suggest repeating these concrete steps, let alone, repeating these concrete steps “until the first promise for the first supply satisfies the first request for the first supply and the second promise for the second supply satisfies the second request for the second supply,” as recited in Claims 23 and 34. *Bhaskaran* merely discloses, for example, that the “active documents integrate the business process, organization of role players and advanced planning decision engines to provide a unified view of the supply chain so that the role player may collaboratively address the supply chain management problem. The underlying information

that characterizes the state of the supply chain is garnered to optimize the overall supply chain using planning and scheduling applications.” (Column 4, Lines 41-48) Such broad statements regarding the “optimization” of a supply chain fail to disclose, teach, or suggest the specific limitations recited in Claims 3-12. This is even more clear in light of the fact that *Bhaskaran* fails to disclose, teach, or suggest a “culprit” and its associated limitations.

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of dependent Claims 23 and 34. These claims are therefore patentable over *Bhaskaran*. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

***L. Group 9 (Claims 27 and 38)***

Dependent Claims 27 and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that these claims are clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Dependent Claims 27 and 38 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the prior art beyond those recited in independent Claims 22 and 33 from which Claims 27 and 38 depend. As another example, Claims 27 and 38 recite patentable distinctions over the prior art different than those recited in other claims that depend from independent Claims 22 and 33.

Dependent Claims 27 and 38 depend from independent Claims 22 and 33, respectively, which Appellant has shown above to be clearly patentable over *Bhaskaran*, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 22 and 33, dependent Claims 27 and 38 are patentable because they recite further patentable distinctions over *Bhaskaran*.

For example, dependent Claim 27 recites that the method further comprises “receiving a first promise for the first supply from the first supplier, the first promise for the first supply comprising the first culprit identifying a culprit promise that does not satisfy the sub-bundled request” and “reoptimizing the production associated with meeting the demand from the third party to generate a new first request for the first supply and a new second request for the second supply using the culprit promise to generate the constraint.” Dependent Claim 38 recites substantially similar limitations.

With respect to Claim 27, the Examiner states “Claims 22-32 recite limitations already addressed by the rejection of claims 1-21 above; therefore, the same rejection applies.” (Final Office Action, Page 13) While it may be true that Claim 27 recites certain limitations that are analogous to limitations recited in Claims 7 and 15-17, for example (and is allowable for at least those reasons discussed above with respect to Claims 7 and 15-17), Claim 27 also recites limitations not present in Claims 7 and 15-17 (and in some cases does not recite certain limitations recited in Claims 7 and 15-17), which provide further patentable distinctions over *Bhaskaran*. For example, *Bhaskaran* simply fails to disclose, teach, or suggest bundled requests, let alone sub-bundled requests, as recited in Claim 27 (which depends from Claims 25 and 26). As another example, *Bhaskaran* fails to disclose, teach, or suggest “reoptimizing the production associated with meeting the demand from the third party to generate a new first request for the first supply and a new second request for the second supply using the culprit promise to generate the constraint,” as recited in Claims 27 and 38.

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of dependent Claims 27 and 38. These claims are therefore patentable over *Bhaskaran*. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

***M. Group 10 (Claims 28 and 39)***

Dependent Claims 28 and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that these claims are clearly



patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Dependent Claims 28 and 39 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the prior art beyond those recited in independent Claims 22 and 33 from which Claims 28 and 39 depend. As another example, Claims 28 and 39 recite patentable distinctions over the prior art different than those recited in other claims that depend from independent Claims 22 and 33.

Dependent Claims 28 and 39 depend from independent Claims 22 and 33, respectively, which Appellant has shown above to be clearly patentable over *Bhaskaran*, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 22 and 33, dependent Claims 28 and 39 are patentable because they recite further patentable distinctions over *Bhaskaran*.

For example, dependent Claim 28 depends from dependent Claim 26 and recites that the method further comprises “receiving a first promise for the first supply from the first supplier, the first promise for the first supply comprising a first culprit promise that does not satisfy a first sub-bundled request,” “receiving a second promise for the second supply from the second supplier, the second promise for the second supply comprising a second culprit promise that does not satisfy a second sub-bundled request, the second sub-bundled promise being larger than the first sub-bundled promise,” and “reoptimizing the production associated with meeting the demand from the third party to generate a new first request for the first supply and a new second request for the second supply using the first culprit promise to generate the constraint.” Dependent Claim 39 recites substantially similar limitations.

With respect to Claim 28, the Examiner states “Claims 22-32 recite limitations already addressed by the rejection of claims 1-21 above; therefore, the same rejection applies.” (Final Office Action, Page 13) While it may be true that Claim 28 recites certain

limitations that are analogous to limitations recited in Claims 7 and 15-17, for example (and is allowable for at least those reasons discussed above with respect to Claims 7 and 15-17), Claim 28 also recites limitations not present in Claims 7 and 15-17 (and in some cases does not recite certain limitations recited in Claims 7 and 15-17), which provide further patentable distinctions over *Bhaskaran*. For example, *Bhaskaran* simply fails to disclose, teach, or suggest bundled requests, let alone sub-bundled requests, as recited in Claim 28 (which depends from Claims 25 and 26). As another example, *Bhaskaran* fails to disclose, teach, or suggest “receiving *a first promise for the first supply from the first supplier*, the first promise for the first supply *comprising a first culprit promise that does not satisfy a first sub-bundled request*” and “receiving *a second promise for the second supply from the second supplier*, the second promise for the second supply *comprising a second culprit promise that does not satisfy a second sub-bundled request, the second sub-bundled promise being larger than the first sub-bundled promise*,” as recited in Claim 28 (and similarly in Claim 39). As another example, *Bhaskaran* fails to disclose, teach, or suggest “*reoptimizing* the production associated with meeting the demand from the third party *to generate a new first request for the first supply and a new second request for the second supply using the first culprit promise to generate the constraint*,” as recited in Claim 28 (and similarly in Claim 39).

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of dependent Claims 28 and 39. These claims are therefore patentable over *Bhaskaran*. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

***N. Group 11 (Claims 29 and 40)***

Dependent Claims 29 and 40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that these claims are clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Dependent Claims 29 and 40 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially

different from limitations recited in other claims and cannot be properly grouped with the claims of other groups for purposes of this Appeal. For example, these claims recite patentable distinctions over the prior art beyond those recited in independent Claims 22 and 33 from which Claims 29 and 40 depend. As another example, Claims 29 and 40 recite patentable distinctions over the prior art different than those recited in other claims that depend from independent Claims 22 and 33. As another example, Dependent Claims 29 and 40 recite certain limitations substantially similar to those discussed above with reference to Claims 8 and 18. However, because these claims depend from independent claims which are separately patentable over *Bhaskaran* (e.g., Claims 8 and 18 depend from independent Claims 1 and 11, respectively, and Claims 29 and 40 depend from independent Claims 22 and 33, respectively, with independent Claims 1 and 11 being grouped separately from independent Claims 22 and 33), Claims 29 and 40 are grouped separately from Claims 8 and 18.

Dependent Claims 29 and 40 depend from independent Claims 22 and 33, respectively, which Appellant has shown above to be clearly patentable over *Bhaskaran*, and are allowable for at least this reason. Furthermore, in addition to those reasons discussed above with reference to independent Claims 22 and 33, dependent Claims 29 and 40 are patentable because they recite further patentable distinctions over *Bhaskaran*. For example, for at least those reasons discussed with respect to dependent Claims 8 and 18, *Bhaskaran* fails to disclose, teach or suggest the limitations recited in Claims 29 and 40.

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of dependent Claims 29 and 40. These claims are therefore patentable over *Bhaskaran*. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

**O. Group 12 (Claim 47)**

Independent Claim 47 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhaskaran*. Appellant respectfully submits that Claim 47 is clearly patentable over *Bhaskaran*. Thus, Appellant respectfully submits that this rejection is improper and should be reversed by the Board.

Independent Claim 47 is separately patentable from every other claim subject to the same ground of rejection. Claim 47 recites limitations that are substantially different from limitations recited in other claims. For example, independent Claim 47 recites patentable distinctions over *Bhaskaran* beyond those recited in independent Claims 1, 11, 22, 33, and 44-46 and cannot be properly grouped with independent Claims 1, 11, 22, 33, and 44-46 for purposes of this Appeal.

Independent Claim 47 recites certain analogous limitations to those recited in independent Claims 1, 11, 22, 33, and 44-46, which Appellant has shown above to be clearly patentable over *Bhaskaran*, and is allowable for substantially similar reasons to those discussed above with reference to those independent claims. Furthermore, in addition to those reasons discussed above with reference to independent Claims 1, 11, 22, 33, and 44-46, independent Claim 47 is patentable because it recites further patentable distinctions over *Bhaskaran*.

Independent Claim 47 recites:

A method for optimizing a request-promise workflow, the method performed using a computer system comprising one or more processing units and one or more memory units, the method comprising:

using the computer system, establishing a demand associated with one or more supplies needed to meet a demand from a third party;

using the computer system, assuming that the supplies are unlimited;

using the computer system, repeating the following until the promise for the supplies satisfies the request for the supplies:

optimizing the production associated with meeting the demand from the third party to generate a request for the supplies needed to meet the demand from the third party, the request for the supplies comprising a first request for a first supply and a second request for a second supply;

communicating the request for the supplies to a supplier;

receiving a promise for the supplies from the supplier, the promise for the supplies comprises a first promise for the first supply and a second promise for the second supply, the promise for the supplies identifying a culprit comprising the second supply as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies, the promise for the supplies comprising an optimization objective and a promise constraint;

determining whether the promise for the supplies satisfies the request for the supplies; and

if the promise for the supplies does not satisfy the request for the supplies, generating a constraint according to the culprit identified in the

promise for the supplies and reoptimizing the production associated with meeting the demand from the third party in accordance with the constraint, the promise constraint, and the optimization objective to generate a new request for the supplies for communication to the supplier.

*Bhaskaran*, whether considered alone or in combination with knowledge generally available to one of ordinary skill in the art at the time of invention, fails to disclose, teach, or suggest various limitations recited in Claim 47. Certain of the patentable distinctions recited in Claim 47 have been discussed above with reference to other independent and dependent claims. Appellant addresses certain patentable distinctions below.

For example, *Bhaskaran* simply fails to disclose, teach, or suggest repeating these very concrete steps, let alone, repeating these concrete steps “until the promise for the supplies satisfies the request for the supplies,” as recited in Claim 47. *Bhaskaran* merely discloses, for example, that the “active documents integrate the business process, organization of role players and advanced planning decision engines to provide a unified view of the supply chain so that the role player may collaboratively address the supply chain management problem. The underlying information that characterizes the state of the supply chain is garnered to optimize the overall supply chain using planning and scheduling applications.” (Column 4, Lines 41-48) Such vague statements regarding the “optimization” of a supply chain fail to disclose, teach, or suggest the specific limitations recited in Claim 47. This is even more clear in light of the fact that *Bhaskaran* fails to disclose, teach, or suggest a “culprit” and its associated limitations.

As another example, *Bhaskaran* fails to disclose, teach, or suggest “receiving a promise for the supplies from the supplier, the promise for the supplies comprises a first promise for the first supply and a second promise for the second supply, the promise for the supplies identifying a culprit comprising the second supply as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies, the promise for the supplies comprising an optimization objective and a promise constraint.” This is at least true because *Bhaskaran* fails to disclose, teach, or suggest a “culprit” and its associated limitations. Moreover, *Bhaskaran* fails to

disclose, teach, or suggest “the promise for the supplies comprising an optimization objective and a promise constraint,” as recited in Claim 47.

As another example, *Bhaskaran* fails to disclose, teach, or suggest “if the promise for the supplies does not satisfy the request for the supplies, generating a constraint according to the culprit identified in the promise for the supplies and reoptimizing the production associated with meeting the demand from the third party in accordance with the constraint, the promise constraint, and the optimization objective to generate a new request for the supplies for communication to the supplier,” as recited in Claim 47.

For at least these reasons, *Bhaskaran* fails support the obviousness rejection of independent Claim 47. Claim 47 is therefore patentable over *Bhaskaran*. Appellant respectfully submits that this rejection is improper and should be reversed by the Board.

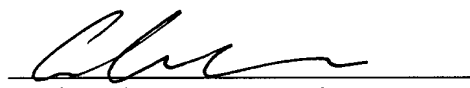
**Conclusion**

Appellant has demonstrated that the present invention, as claimed, is clearly patentably distinguishable over the prior art cited by the Examiner. Therefore, Appellant respectfully requests the Board of Patent Appeals and Interferences to reverse the final rejection of the Examiner and instruct the Examiner to issue a Notice of Allowance of all pending claims.

The Commissioner is hereby authorized to charge the filing fee of \$340.00 for this Appeal Brief to Deposit Account No. 02-0384 of Baker Botts L.L.P. Although Appellant believes no other fees are due, the Commissioner is hereby authorized to charge any additional fees and credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P. A duplicate first page and signature page of this document is attached for purposes of using the Deposit Account.

Respectfully submitted,

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**Date:** October 18, 2004

Customer Number: **05073**

A.1

**Appendix A**

1. (Previously presented) A system for optimizing a request-promise workflow between a first entity and a second entity downstream from the first entity, the first entity supplying supplies to the second entity in response to demand for supplies from the second entity, the system being associated with the second entity and comprising one or more processing units and one or more memory units collectively operable to:

establish a demand at the second entity for one or more supplies supplied by the first entity, the demand for the supplies based at least in part on a demand placed on the second entity by a third entity downstream from the second entity;

optimize the second entity's production associated with meeting the demand from the third entity to generate the request for the supplies;

communicate the request for the supplies to the first entity, a system associated with the first entity operable to optimize the first entity's production of the supplies using the request for the supplies as a first constraint to generate a promise for the supplies based on the request for the supplies;

receive the promise for the supplies from the first entity, the promise for the supplies having been generated according to an optimization of the first entity's production of the supplies using the request for the supplies as a first constraint, the promise for the supplies identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies;

if the promise for the supplies does not satisfy the request for the supplies, generate a second constraint according to the culprit identified in the promise for the supplies; and

if the promise for the supplies does not satisfy the request for the supplies, reoptimize the second entity's production associated with meeting the demand from the third entity using the second constraint generated according to the culprit identified in the promise for the supplies to generate a new request for the supplies.



A.2

2. (Previously Presented) The system of Claim 1, wherein the system associated with the first entity is operable to repeat the following until the promise for the supplies satisfies the request for the supplies:

- receiving a request for the supplies from the second entity;
- reoptimizing the first entity's production of the supplies using the request for the supplies as a constraint to generate the promise for the supplies; and
- communicating the promise for the supplies to the second entity.

3. (Previously Presented) The system of Claim 1, further operable to repeat the following until the promise for the supplies satisfies the request for the supplies:

- optimizing the second entity's production associated with meeting the demand from the third entity to generate a request for the supplies;

- communicating the request for the supplies to the first entity;

- receiving a promise for the supplies from the first entity based on the request for the supplies, the promise for the supplies having been generated according to an optimization of the first entity's production of the supplies using the request for the supplies as a first constraint, the promise for the supplies identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies;

- if the promise for the supplies does not satisfy the request for the supplies, generating a second constraint according to the culprit identified in the promise for the supplies; and

- reoptimizing the second entity's production associated with meeting the demand from the third entity using the second constraint generated according to the culprit identified in the promise for the supplies to generate a new request for the supplies if the promise for the supplies does not satisfy the request for the supplies.

A.3

4. (Previously Presented) The system of Claim 1, wherein:  
the system associated with the first entity is further operable to optimize the first entity's production of the supplies independently of the second entity; and  
the system associated with the second entity is further operable to optimize the second entity's production associated with meeting the demand from the third entity independently of the first entity.

5. (Previously Presented) The system of Claim 1, wherein:  
the request for the supplies comprises a first request for a first supply and a second request for a second supply; and  
the promise for the supplies comprises a first promise for the first supply and a second promise for the second supply, the promise for the supplies identifying the second supply as the culprit if the promise for the supplies does not satisfy the request for the supplies.

6. (Previously Presented) The system of Claim 5, wherein:  
the second promise does not satisfy the second request for the second supply, the promise for the supplies identifying the second supply as the culprit; and  
the system associated with the second entity is further operable to optimize the second entity's production associated with meeting the demand from the third entity to generate a new request for the supplies using the second promise for the second supply to generate the second constraint.

A.4

7. (Previously Presented) The system of Claim 1, wherein:

the request for the supplies comprises a bundled request for at least two supplies for the second entity's production associated with meeting the demand from the third entity;

the promise for the supplies in response to the bundled request for the at least two supplies comprises a first promise, a second promise, and the culprit, the culprit identifying the second promise as the cause for the promise for the supplies not satisfying the bundled request for the at least two supplies; and

the system associated with the second entity is operable to reoptimize the second entity's production associated with meeting the demand from the third entity to generate a new request for the at least two supplies using the second promise to generate the second constraint.

8. (Previously Presented) The system of Claim 1, wherein:

the promise for the supplies comprises an optimization objective and a promise constraint; and

the system associated with the second entity is operable to reoptimize the second entity's production associated with meeting the demand from the third entity to generate a new request for the supplies using the promise constraint and the optimization objective.

9. (Previously Presented) The system of Claim 1, wherein the system associated with the second entity is operable to generate a request for the supplies in accordance with one or more internal resources.

10. (Previously Presented) The system of Claim 1, wherein the system associated with the second entity is operable to communicate a demand promise associated with meeting the demand from the third party to the third entity if the promise for the supplies satisfies the request for the supplies.

A.5

11. (Previously presented) A computer-implemented method for optimizing a request-promise workflow, the method performed using a computer system comprising one or more processing units and one or more memory units, the method comprising:

using the computer system, establishing a demand for one or more supplies needed to meet a demand from a third party;

using the computer system, assuming that the supplies are unlimited;

using the computer system, optimizing the production associated with meeting the demand from the third party to generate a request for the supplies needed to meet the demand from the third party;

using the computer system, communicating the request for the supplies to a supplier of the supplies;

using the computer system, receiving a promise for the supplies from the supplier, the promise for the supplies having been generated according to an optimization of the supplier's production of the supplies using the request for the supplies as a first constraint, the promise for the supplies identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies;

using the one or more computer systems, determining whether the promise for the supplies satisfies the request for the supplies; and

using the one or more computer systems, if the promise for the supplies does not satisfy the request for the supplies, generating a second constraint according to the culprit identified in the promise for the supplies and reoptimizing the production associated with meeting the demand from the third party using the second constraint generated according to the culprit identified in the promise for the supplies to generate a new request for the supplies for communication to the supplier.

A.6

12. (Previously Presented) The method of Claim 11, further comprising repeating the following until the promise for the supplies satisfies the request for the supplies:

optimizing the production associated with meeting the demand from the third party to generate a request for the supplies needed to meet the demand from the third party;

communicating the request for the supplies to the supplier;

receiving a promise for the supplies from the supplier, the promise for the supplies identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies;

determining whether the promise for the supplies satisfies the request for the supplies;  
and

if the promise for the supplies does not satisfy the request for the supplies, generating a constraint according to the culprit identified in the promise for the supplies and reoptimizing the production associated with meeting the demand from the third party in accordance with the constraint to generate a new request for the supplies for communication to the supplier.

13. (Previously Presented) The method of Claim 11, wherein:

the request for the supplies comprises a first request for a first supply and a second request for a second supply; and

the promise for the supplies comprises a first promise for the first supply and a second promise for the second supply, the promise for the supplies identifying the second supply as the culprit identified in the promise for the supplies if the promise for the supplies does not satisfy the request for the supplies.

14. (Previously Presented) The method of Claim 13, wherein:

the second promise does not satisfy the second request for the second supply, the promise for the supplies identifying the second supply as the culprit; and

reoptimizing the production associated with meeting the demand from the third party to generate a new request for the supplies further comprises using the second promise for the second supply to generate the constraint.

A.7

15. (Previously Presented) The method of Claim 11, wherein:  
the request for the supplies comprises a bundled request comprising a first request for a first supply and a second request for a second supply; and

the promise for the supplies comprises a first promise for the first supply, a second promise for the second supply, and the culprit, the culprit identifying the second promise for the second supply as the cause for the promise for the supplies not satisfying the bundled request.

16. (Previously Presented) The method of Claim 15, wherein reoptimizing the production of the demand to generate a new request for the supplies further comprises using the second promise for the second supply to generate the constraint.

17. (Previously Presented) The method of Claim 15, wherein the bundled request comprises the supplies required for meeting one unit of the demand from the third party.

18. (Previously Presented) The method of Claim 11, wherein:  
the promise for the supplies comprises an optimization objective and a promise constraint; and

reoptimizing the production associated with meeting the demand from the third party to generate a new request for the supplies further comprises reoptimizing using the promise constraint and the optimization objective.

19. (Previously Presented) The method of Claim 11, wherein:  
optimizing the production associated with meeting the demand from the third party to generate a request for the supplies needed to meet the demand from the third party further comprises generating the request for the supplies in accordance with one or more internal resources; and

reoptimizing the production associated with meeting the demand from the third party to generate a new request for the supplies further comprises generating the new request for the supplies in accordance with the one or more internal resources.

A.8

20. (Previously Presented) The method of Claim 11, wherein determining whether the promise for the supplies satisfies the request for the supplies comprises determining whether the promise for the supplies falls within an acceptable range.

21. (Previously Presented) The method of Claim 11, further comprising communicating a demand promise associated with meeting the demand from the third party to the third party if the promise for the supplies satisfies the request for the supplies.

A.9

22. (Previously presented) A computer-implemented method for optimizing a request-promise workflow, the method performed using a computer system comprising one or more processing units and one or more memory units, the method comprising:

using the computer system, establishing a demand for one or more supplies needed to meet a demand from a third party;

using the computer system, assuming that the supplies are unlimited;

using the computer system, optimizing the production associated with meeting the demand from the third party to generate a first request for a first supply and a second request for a second supply needed to satisfy the demand from the third party;

using the computer system, communicating the first request for the first supply to a first supplier;

using the computer system, communicating the second request for the second supply to a second supplier;

using the computer system, receiving a first promise for the first supply from the first supplier, the first promise for the first supply identifying a first culprit as a cause for the first promise for the first supply not satisfying the first request for the first supply if the first promise for the first supply does not satisfy the first request for the first supply;

using the computer system, receiving a second promise for the second supply from the second supplier, the second promise for the second supply identifying a second culprit as a cause for the second promise for the second supply not satisfying the second request for the second supply if the second promise for the second supply does not satisfy the second request for the second supply;

using the computer system, determining whether the first promise for the first supply satisfies the first request for the first supply;

using the computer system, determining whether the second promise for the second supply satisfies the second request for the second supply; and

using the computer system, if the first promise for the first supply does not satisfy the first request for the first supply or the second promise for the second supply does not satisfy the second request for the second supply, generating a constraint according to the first culprit identified in the first promise for the first supply or the second culprit identified in the second promise for the second supply, respectively, and reoptimizing the production associated with



A.10

meeting the demand from the third party in accordance with the constraint to generate a new first request for the first supply and a new second request for the second supply.

A.11

23. (Previously Presented) The method of Claim 22, further comprising repeating the following until the first promise for the first supply satisfies the first request for the first supply and the second promise for the second supply satisfies the second request for the second supply:

- optimizing the production associated with meeting the demand from the third party to generate a first request for a first supply and a second request for a second supply needed to meet the demand from the third party;

- communicating the first request for the first supply to the first supplier;

- communicating the second request for the second supply to the second supplier;

- receiving a first promise for the first supply from the first supplier, the first promise for the first supply identifying a first culprit as a cause for the first promise for the first supply not satisfying the first request for the first supply if the first promise for the first supply does not satisfy the first request for the first supply;

- receiving a second promise for the second supply from the second supplier, the second promise for the second supply identifying a second culprit as a cause for the second promise for the second supply not satisfying the second request for the second supply if the second promise for the second supply does not satisfy the second request for the second supply;

- determining whether the first promise for the first supply satisfies the first request for the first supply;

- determining whether the second promise for the second supply satisfies the second request for the second supply; and

- if the first promise for the first supply does not satisfy the first request for the first supply or the second promise for the second supply does not satisfy the second request for the second supply, generating a constraint according to the first culprit identified in the first promise for the first supply or the second culprit identified in the second promise for the second supply, respectively, and reoptimizing the production associated with meeting the demand from the third party in accordance with the constraint to generate a new first request for the first supply and a new second request for the second supply.

A.12

24. (Previously Presented) The method of Claim 22, wherein:  
the second promise for the second supply does not satisfy the second request for the second supply, the second promise for the second supply identifying the second culprit; and  
reoptimizing the production associated with meeting the demand from the third party to generate a new first request for the first supply and a new second request for the second supply further comprises using the second promise for the second supply to generate the constraint.

25. (Previously Presented) The method of Claim 22, wherein the request for the supplies comprises a bundled request for one or more supplies required for meeting one unit of the demand from the third party.

26. (Previously Presented) The method of Claim 25, wherein the request for the supplies further comprises a sub-bundled request for the supplies supplied by the first supplier.

27. (Previously Presented) The method of Claim 26, further comprising:  
receiving a first promise for the first supply from the first supplier, the first promise for the first supply comprising the first culprit identifying a culprit promise that does not satisfy the sub-bundled request; and  
reoptimizing the production associated with meeting the demand from the third party to generate a new first request for the first supply and a new second request for the second supply using the culprit promise to generate the constraint.

A.13

28. (Previously Presented) The method of Claim 26, further comprising:  
receiving a first promise for the first supply from the first supplier, the first promise for the first supply comprising a first culprit promise that does not satisfy a first sub-bundled request;

receiving a second promise for the second supply from the second supplier, the second promise for the second supply comprising a second culprit promise that does not satisfy a second sub-bundled request, the second sub-bundled promise being larger than the first sub-bundled promise;

reoptimizing the production associated with meeting the demand from the third party to generate a new first request for the first supply and a new second request for the second supply using the first culprit promise to generate the constraint.

29. (Previously Presented) The method of Claim 22, wherein:  
the first promise for the first supply comprises an optimization objective and a promise constraint; and

reoptimizing the production associated with meeting the demand from the third party to generate a new first request for the first supply and a new second request for the second supply further comprises reoptimizing using the promise constraint and the optimization objective.

30. (Previously Presented) The method of Claim 22, wherein:  
optimizing the production associated with meeting the demand from the third party to generate a first request for a first supply and a second request for a second supply needed to meet the demand from the third party further comprises generating the first request for the first supply in accordance with one or more internal resources; and

reoptimizing the production associated with meeting the demand from the third party to generate a new first request for the first supply and a new second request for the second supply further comprises generating the new first request for the first supply and a new second request for the second supply in accordance with the one or more internal resources.

A.14

31. (Previously Presented) The method of Claim 22, wherein determining whether the first promise for the first supply satisfies the first request for the first supply comprises determining whether the first promise for the first supply falls within an acceptable range.

32. (Previously Presented) The method of Claim 22, further comprising communicating a demand promise associated with meeting the demand from the third party to the third party if the first promise for the first supply satisfies the first request for the first supply and the second promise for the second supply satisfies the second request for the second supply.

A.15

33. (Previously presented) A system for optimizing a request-promise workflow between a first entity and a second entity downstream from the first entity, the first entity supplying supplies to a second entity in response to demand for the second entity, the system being associated with the second entity and comprising one or more processing units and one or more memory units collectively operable to:

- establish a demand for one or more supplies needed to meet a demand placed on the second entity by a third entity downstream from the second entity;

- assume that the supplies are unlimited;

- optimize production associated with meeting the demand from the third entity to generate a first request for a first supply and a second request for a second supply needed to meet the demand from the third entity;

- communicate the first request for the first supply to a first supplier;

- communicate the second request for the second supply to a second supplier;

- receive a first promise for the first supply from the first supplier, the first promise for the first supply identifying a first culprit as a cause for the first promise for the first supply not satisfying the first request for the first supply if the first promise for the first supply does not satisfy the first request for the first supply;

- receive a second promise for the second supply from the second supplier, the second promise for the second supply identifying a second culprit as a cause for the second promise for the second supply not satisfying the second request for the second supply if the second promise for the second supply does not satisfy the second request for the second supply;

- determine whether the first promise for the first supply satisfies the first request for the first supply;

- determine whether the second promise for the second supply satisfies the second request for the second supply; and

- if the first promise for the first supply does not satisfy the first request for the first supply or the second promise for the second supply does not satisfy the second request for the second supply, generate a constraint according to the first culprit identified in the first promise for the first supply or the second culprit identified in the second promise for the second supply, respectively, and reoptimize the production associated with meeting the

A.16

demand from the third entity in accordance with the constraint to generate a new first request for the first supply and a new second request for the second supply.

A.17

34. (Previously Presented) The system of Claim 33, operable to repeat the following until the first promise for the first supply satisfies the first request for the first supply and the second promise for the second supply satisfies the second request for the second supply:

- optimizing production associated with meeting the demand from the third entity to generate a first request for a first supply and a second request for a second supply needed to meet the demand from the third entity;

- communicating the first request for the first supply to the first supplier;

- communicating the second request for the second supply to the second supplier;

- receiving a first promise for the first supply from the first supplier, the first promise for the first supply identifying a first culprit as a cause for the first promise for the first supply not satisfying the first request for the first supply if the first promise for the first supply does not satisfy the first request for the first supply;

- receiving a second promise for the second supply from the second supplier, the second promise for the second supply identifying a second culprit as a cause for the second promise for the second supply not satisfying the second request for the second supply if the second promise for the second supply does not satisfy the second request for the second supply;

- determining whether the first promise for the first supply satisfies the first request for the first supply;

- determining whether the second promise for the second supply satisfies the second request for the second supply; and

- if the first promise for the first supply does not satisfy the first request for the first supply or the second promise for the second supply does not satisfy the second request for the second supply, generating a constraint according to the first culprit identified in the first promise for the first supply or the second culprit identified in the second promise for the second supply, respectively, and reoptimizing the production associated with meeting the demand from the third entity in accordance with the constraint to generate a new first request for the first supply and a new second request for the second supply.



A.18

35. (Previously Presented) The system of Claim 33, wherein:  
the second promise for the second supply does not satisfy the second request for the second supply, the second promise for the second supply identifying the second culprit; and  
reoptimizing the production associated with meeting the demand from the third entity to generate a new first request for the first supply and a new second request for the second supply further comprises using the second promise for the second supply to generate the constraint.

36. (Previously Presented) The system of Claim 33, wherein the request for the supplies comprises a bundled request for one or more supplies required for meeting one unit of the demand from the third entity.

37. (Previously Presented) The system of Claim 36, wherein the request for the supplies further comprises a sub-bundled request for the supplies supplied by the first supplier.

38. (Previously Presented) The system of Claim 37, further operable to:  
receive a first promise for the first supply from the first supplier, the first promise for the first supply comprising the first culprit identifying a culprit promise that does not satisfy the sub-bundled request; and  
reoptimize the production of the demand to generate a new first request for the first supply and a new second request for the second supply using the culprit promise to generate the constraint.

A.19

39. (Previously Presented) The system of Claim 37, further operable to:  
receive a first promise for the first supply from the first supplier, the first promise for the first supply comprising a first culprit promise that does not satisfy a first sub-bundled request;

receive a second promise for the second supply from the second supplier, the second promise for the second supply comprising a second culprit promise that does not satisfy a second sub-bundled request, the second sub-bundled promise being larger than the first sub-bundled promise;

reoptimize the production associated with meeting the demand from the third entity to generate a new first request for the first supply and a new second request for the second supply using the first culprit promise to generate the constraint.

40. (Previously Presented) The system of Claim 33, further operable to reoptimize production associated with meeting the demand from the third entity to generate a new first request for the first supply and a new second request for the second supply by reoptimizing using a promise constraint and an optimization objective, the first promise for the first supply comprising the optimization objective and the promise constraint.

41. (Previously Presented) The system of Claim 33, further operable to:  
optimize the production associated with meeting the demand from the third entity to generate a first request for a first supply and a second request for a second supply needed to meet the demand from the third entity by generating the first request for the first supply in accordance with one or more internal resources; and

reoptimize the production associated with meeting the demand from the third entity to generate a new first request for the first supply and a new second request for the second supply by generating the new first request for the first supply and a new second request for the second supply in accordance with the one or more internal resources.

42. (Previously Presented) The system of Claim 33, further operable to determine whether the first promise for the first supply satisfies the first request for the first supply by determining whether the first promise for the first supply falls within an acceptable range.

A.20

43. (Previously Presented) The system of Claim 33, further operable to communicate a demand promise associated with meeting the demand from the third entity to the third entity if the first promise for the first supply satisfies the first request for the first supply and the second promise for the second supply satisfies the second request for the second supply.

44. (Previously Presented) Software for optimizing a request-promise workflow, the software embodied in computer-readable media and when executed operable to:

establish a demand for one or more supplies needed to meet a demand from a third party;

assume that the supplies are unlimited;

optimize production associated with meeting the demand from the third party to generate a request for the supplies needed to meet the demand from the third party;

communicate the request for the supplies to a supplier;

receive a promise for the supplies from the supplier, the promise for the supplies identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies;

determine whether the promise for the supplies satisfies the request for the supplies; and

if the promise for the supplies does not satisfy the request for the supplies, generate a constraint according to the culprit identified in the promise for the supplies and reoptimize the production associated with meeting the demand from the third party using the constraint generated according to the culprit identified in the promise for the supplies to generate a new request for the supplies for communication to the supplier.

A.21

45. (Previously Presented) Software for optimizing a request-promise workflow, the software embodied in computer-readable media and when executed operable to:

establish a demand for one or more supplies needed to meet a demand from a third party;

assume that the supplies are unlimited;

optimize production associated with meeting the demand from the third party to generate a first request for a first supply and a second request for a second supply needed to meet the demand from the third party;

communicate the first request for the first supply to a first supplier;

communicate the second request for the second supply to a second supplier;

receive a first promise for the first supply from the first supplier, the first promise for the first supply identifying a first culprit as a cause for the first promise for the first supply not satisfying the first request for the first supply if the first promise for the first supply does not satisfy the first request for the first supply;

receive a second promise for the second supply from the second supplier, the second promise for the second supply identifying a second culprit as a cause for the second promise for the second supply not satisfying the second request for the second supply if the second promise for the second supply does not satisfy the second request for the second supply;

determine whether the first promise for the first supply satisfies the first request for the first supply;

determine whether the second promise for the second supply satisfies the second request for the second supply; and

if the first promise for the first supply does not satisfy the first request for the first supply or the second promise for the second supply does not satisfy the second request for the second supply, generate a constraint according to the first culprit identified in the first promise for the first supply or the second culprit identified in the second promise for the second supply, respectively, and reoptimize the production associated with meeting the demand from the third party in accordance with the constraint to generate a new first request for the first supply and a new second request for the second supply.

A.22

46. (Previously Presented) A system for optimizing a request-promise workflow, comprising:

means for establishing a demand for one or more supplies needed to meet a the demand from a third party;

means for assuming that the supplies are unlimited;

means for optimizing the production associated with meeting the demand from the third party to generate a request for the supplies needed to meet the demand from the third party;

means for communicating the request for the supplies to a supplier;

means for receiving a promise for the supplies from the supplier, the promise for the supplies identifying a culprit as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies;

means for determining whether the promise for the supplies satisfies the request for the supplies; and

if the promise for the supplies does not satisfy the request for the supplies, means for generating a constraint according to the culprit identified in the promise for the supplies and reoptimizing the production associated with meeting the demand from the third party using the constraint generated according to the culprit identified in the promise for the supplies to generate a new request for the supplies for communication to the supplier.

A.23

47. (Previously presented) A method for optimizing a request-promise workflow, the method performed using a computer system comprising one or more processing units and one or more memory units, the method comprising:

- using the computer system, establishing a demand associated with one or more supplies needed to meet a demand from a third party;

- using the computer system, assuming that the supplies are unlimited;

- using the computer system, repeating the following until the promise for the supplies satisfies the request for the supplies:

  - optimizing the production associated with meeting the demand from the third party to generate a request for the supplies needed to meet the demand from the third party, the request for the supplies comprising a first request for a first supply and a second request for a second supply;

  - communicating the request for the supplies to a supplier;

  - receiving a promise for the supplies from the supplier, the promise for the supplies comprises a first promise for the first supply and a second promise for the second supply, the promise for the supplies identifying a culprit comprising the second supply as a cause for the promise for the supplies not satisfying the request for the supplies if the promise for the supplies does not satisfy the request for the supplies, the promise for the supplies comprising an optimization objective and a promise constraint;

  - determining whether the promise for the supplies satisfies the request for the supplies; and

  - if the promise for the supplies does not satisfy the request for the supplies, generating a constraint according to the culprit identified in the promise for the supplies and reoptimizing the production associated with meeting the demand from the third party in accordance with the constraint, the promise constraint, and the optimization objective to generate a new request for the supplies for communication to the supplier.

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**Appendix B**